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WOLDEMARIAM, AKILILU K	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/755,868	KALEVO, OSSI	
	Examiner	Art Unit	
	AKLILU k. WOLDEMARIAM	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-8,11,12,14,16-23,25,26,28-32 and 34-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-8,11,12,14,16-23,25,26,28-32 and 34-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/04/2008, 01/22/2008, 07/05/2007, 11/09/2005, 06/17/2004, 01/12/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. *Applicant's amendment filed on 05/28/2009 has been entered. Claims 1, 3, 5-7, 12, 14, 16-18, 23, 25-26, 30-32 and 37-38 have been amended. Claims 4, 9-10, 13, 15, 24, 27 and 33 have been cancelled. Claims 39-40 have been added. Claims 1-3, 5-8, 11-12, 14, 16-23, 25-26, 28-32 and 34-40 are still pending, with claims 1,12, 23, 30, 32, 37-38 being an independent.*

Response to Arguments

2. Applicant's arguments, see page 14, filed 05/28/2009 , with respect to the rejection of claims 1,12, 23, 30-32 and 37-38 under 112 , first paragraph as comply with the written description requirement, for claim limitation,"" searching for a predication value corresponding to said pixel", this claim limitation deleted by applicant", have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground rejection has been made under 112, first paragraph as comply with the written description requirement.

Applicant's arguments, see page 15, filed 05/28/2009, with respect to rejection of claim 1 under 35 U.S.C 101, as being nonstatutory. Applicant arguments are not persuasive. *"determining a difference between a pixel value and a prediction value, and using the difference to select a method for encoding the pixel into the bit string*" does not satisfy transformation requirement, because there is nothing in claim specifying or showing an output of data and it is data analysis. Transformation analysis requires data output such as visual display or printing. Therefore, the transformation or modification of claim 1 is not meaningful.

Note: Office action that was sent 02/26/2009, Supplemental amended claims are rejected under 35 U.S.C 101 rejections and 35 U.S.C 112, first paragraph, as failing to comply with the written description requirement, ***in condition for allowance.*** Examiner suggested claim amendment to supplemental amended claims to over come 35 U.S. C 101 rejections and 35 U.S.C 112, first paragraph as comply with the written description requirement.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 12, 23, 32, 37 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 1, lines 4-5, claim limitation, " at the start of a line when a prediction value is not available for the pixel, encoding a quantized pixel value to the bit string" does not have enablement as described in original specification, [paragraph [0032] if there is no prediction value available, that is in a situation in which the two first pixels of an image line are processed, the original pixel is quantized form N bits to M bits and is transferred to the PCM codec]. In claim 1, lines 8-9, *" difference is used for selecting method for encoding among more than two encoding methods to encoded said pixel into the bit string"* does not have enablement as described in original

specification, [paragraph [0010], [0012] if the prediction value is found, the device is arranged to determine the difference between the pixel and the prediction value, wherein means for encoding the pixel are arranged to apply the method corresponding to the difference for encoding the bit string of said pixel as well as to encode, in the bit string, also a code word to indicate the selected encoding method in such a way that the encoded bit string has a fixed length [0014], [0015] and [0031]). In claim 1, lines 14-15, claim limitation, *" in which method the bit string has a fixed-length smaller than the length of originally digitized pixel encoded pixels in the image" does not have enablement as described in original specification, [paragraph [0030] the difference between the original and predicted pixel value is smaller than a predetermined limit value (abs(Xdiff) < Lim)].*

Claims 12, 23, 32, 37 and 38 are rejected under 112, first paragraph, as failing to comply with the enablement requirement, for above similar reasons.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 1 recites the limitation for quantizing the value in line 10. There is insufficient antecedent basis for this limitation in the claim. Claims 12, 23, 32, 37 and 38 are rejected for above similar reasons. Examiner suggested claim amendment to over come above rejection.

7. Claims 5 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 can depend on any preceding claims 1, 2 or

3, however claim 5 can not depend on claim 39. Claim 16 can depend on any of preceding claims, however claim 16 can not depend on claim 40. Therefore, above claims are indefinite. Examiner suggested claim amendment to over come above rejection. Therefore, **claims examined as best understood by Examiner.**

8. Claims 12, 23, 32, 37 and 38 are rejected under 35 U.S.C 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 12, lines 2 and 6, phrase, "configured to" is indefinite because it is an intended use. Claims 23, 32, 37 and 38 are rejected for above similar reason. **Claims examined as best understood by Examiner**.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 1-3, 5-8 and 11 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit[1], relying upon Supreme Court precedent[2], has indicated that a statutory "process" under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the "machine or transformation test", whereby the recitation of a particular machine or transformation of

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[1] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

[2] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590"). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor are positively tied to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. *Machine test Analysis , in claim 1 in the steps " at the start of a line a prediction value", "determining a difference between the pixel value and the prediction value", and " encoding a code word" do not have any "computer " or " processor" or " device" to carry out all the steps of in claim 1. It is clear that claim 1 is not tied to a particular machine and claim does not fail to pass the machine test analysis. And also claim 1 does not have (a) physical or chemical transformation of a physical object, (b) no modification to data or signal; (c) claim 1 does not have either displaying or printing any where in claim1; (d) Modification and /or transformation not meaningful or insignificant. Therefore claim 1 requires computers or processors or device after the word "comprising".*

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Weinberger et, al., "Weinberger" (U.S. Patent number 5, 680, 129).

Regarding claim 37, *Weinberger discloses* a device for image processing *(see fig.15, image processing system and col.22, lines 42-67, a compute system incorporating the image compressor and image decompressor)*, comprising:

a decoder for decoding an encoded bit string to obtain pixels of an image, in which bit string the number of bits is fixed *(see col.6 lines 29-31, an additional fundamental limitation to Huffman codes is that they require a minimum code length of one bit per encoding and line 64-col.7, line 3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12 and fig.13, decoding),*

wherein the bit string comprises a code word and a value, wherein the decoder is configured to recognize the code word to select a decoding method indicated by the code word among at least a first decoding method and a second decoding method corresponding with the encoding method used in forming the bit string *(see col.6 lines 29-31, an additional fundamental limitation to Huffman codes is that they require a minimum code length of one bit per encoding and line 64-col.7, line 3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12 and fig.13, decoding and col.14, lines 58-67, for example for T=8, a possible code can assign code words of length 3 to the events 0.1 and -1 code words of length 4 to the events 2, -2-3 and -3, and code words of length 5 to the other events and col.17, line 35- col.18, line 7)*;

to determine a dequantizer value on the bases of the selected decoding method, wherein the decoder comprises a memory for storing at least one decoded pixel as a prediction value, wherein the device is arranged to retrieve the prediction value corresponding to the pixel from said memory *(see col.16, lines 45-67, the decorder 1201 accepts a compressed image from the image compressor 201 and stores this compressed image in a compressed image buffer 1203 , col.7, line 35-col-18, line 7),*

wherein said device is configured to dequantize said value by said dequantizer value to obtain a dequantized value (*see col.16, lines 45-67, the decorder 1201 accepts a compressed image from the image compressor 201 and stores this compressed image in a compressed image buffer 1203 , col.7, line 35-col-18, line 7)*, and

if the first decoding method was selected, the device is configured to use said dequantized value to obtain the pixel value, if the second decoding method was selected, the device is configured to use said dequantized value and said prediction value to obtain the pixel value, in which device the bit string has fixed-length smaller than the length of the obtained pixel value for each pixel in the image (see *col.15, lines 5-9, the encoder decides for the alternative that results in the shortest code length and the decoder is informed of the codes to be used in the second pass and* col.16*, lines 45-67 , col.17, line 35-col.18, line 7).*

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-3, 5-8, 12, 14, 16-23, 25-26, 28-32, 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et, al., "Weinberger" (U.S. Patent number 5, 680, 129) in view of Kato (U.S. Patent number 5, 392, 037).

Regarding claims 1, 12, 23, 32 and 38, *Weinberger discloses* a method for image processing and an image processing system, a device for image processing, a circuit for image processing and a device for image processing, in which the number of bits is fixed in an encoded bit string, wherein a pixel is encoded into the bit string (*see fig.2 and col.4, lines 49-61, it is another object of the inventions to overcome the minimum of one-bit per pixel limitation of Huffman coding and col.6, lines 29-31, an additional fundamental limitation of Huffman codes is that require a minimum code length of one bit per encoding),* the method comprising:

at the start of a line when a prediction value is not available for the pixel,

encoding a quantized pixel value to the bit string (*see fig.7, encoder and col.8, lines 47-55, the context quantizer/pixel encoder),*

each method for encoding having a certain step size for quantizing the value, and said certain step size being different in each method for encoding *(see col.6, lines 46-50, the pixel sequence generator 205 is connected to a predictor 207 and to a context quantizer and pixel encoder for the pixel currently being processed, using its context. The total number of possible contexts can be quite large. The content quantizer 209 operates to classify a particular context as being one in a set of quantized contexts),* wherein the method further comprising;

encoding a code word indicating the selected encoding method and the quantizer step size and the quantized value to the bit string *(see col.6, lines 14-17, the compressor of the present invention is based on a fixed context model, but is tuned for efficient performance in conjunction with collection of context-conditional Huffman codes and*

lines 29-31, an additional fundamental limitation of Huffman codes is that require a minimum code length of one bit per encoding and col.9, lines 46-52, after a prediction residual is identified to be large possible values (representing the absolute value of the error) need to be assigned to code words);

in which method the bit string has a fixed-length smaller than the length of the originally digitized pixel encoded pixels in the image *(see col.9, lines 21-45, parameter resources by encoding all the occurrences of large prediction residuals using a single distribution, regardless of the context at which the events and col.14, lines 58-67 and col.15, lines 5-9, the encoder decides for the alternative that results in the shortest code length and the decoder is informed of the codes to be used in the second pass).*

Weinberger does not disclose if the prediction value is available for the pixel, determining a difference between the pixel value and the prediction value, which difference is used for selecting method for encoding among more than two encoding methods to encode said pixel into the bit string.

However, Kato discloses if the prediction value is available for the pixel, determining a difference between the pixel value and the prediction value, which difference is used for selecting method for encoding among more than two encoding methods to encode said pixel into the bit string *(see col.3, lines 15-17, calculating an estimator error which is equal to a difference between the estimate (prediction value) and input data (pixel) and col.6, lines 61-68).*

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Kato's if the prediction value is available for the pixel, determining a

difference between the pixel value and the prediction value, which difference is used for selecting method for encoding among more than two encoding methods to encode said pixel into the bit string in Weinberger's a method for image processing, in which the number of bits is limited in an encoded bit string of a pixel because it will allow to provide an improved apparatus for efficient encoding, [Kato, see column 3, lines 9-10].

Regarding claim 2, *Kato discloses* the method according to claim 1, wherein the code word to indicate the selected encoding method is of variable length *(see col.4, lines 31-40, a fifth aspect of this invention provides a method of efficient encoding which comprises the steps of encoding input data into a variable length code and arranging the variable-length code into a store region of a given capacity).*

Regarding claim 3, *Kato discloses* the method according to claim 1, wherein quantizing is used to encode the bit string, wherein first a limit value is determined, wherein said difference is compared with said limit value in such a way that when the difference is smaller, the quantized value is determined by quantizing the difference is whereas when the difference is greater, the quantized value is determined by quantizing the original digitized value of the pixel (*see col.3, lines 15-25, calculating an estimation error which is equal difference between the estimate(prediction value) and input data (pixel)).*

Regarding claim 5, *Kato discloses* the method according to claim 39, wherein said code word is determined on the basis of the original and limited number of bits in the pixel in such a way that the code word length is two bits when the absolute value of the difference is less than 32, and that the code word length is three bits when the absolute

value of the difference is more than 31 and less than 128, wherein when the absolute value of the difference exceeds 128, the code word length is selected to be one bit, wherein the encoding method is changed *(see col.6, line 61- col.7, line 12, the estimation error).*

Regarding claim 8, *Kato discloses* the method according to claim 1, wherein said prediction value is the value of one encoded pixel value or the average of several encoded pixel values *(see item 504, fig.5 and averaging circuit).*

Regarding claim 11, *Weinberger discloses* the method according to claim 1, wherein the pixel is encoded for transfer between a camera module and an electronic device *(see col.22, lines 46-50, the image sources 1505 may include devices such as digital cameras and scanners. The computer system 1501 may also be connected to computer networks).*

Regarding claim 16, *Kato discloses* the system according to claim 40, wherein the system is also configured for forming the length of the code word on the basis of the original and limited number of bits in the pixel in such a way that the code word length is two bits when the absolute value of the difference is less than 32, and that the code word length is three bits when the change absolute value of the difference is more than 31 and less than 128, wherein when the change absolute value of the difference exceeds 128, the code word length is one bit, to change the encoding method *(see col.6, line 61- col.7, line 12, the estimation error).*

Regarding claim 19, *Kato discloses* the system according to claim 12, wherein said prediction value is the value of one encoded pixel value or the average of several encoded pixel values (*see item 504, fig.5 and averaging circuit).*

Regarding claim 20, *Weinberger discloses* the system according to claim 12, wherein the system also comprises means for decoding the bit string to correspond to the encoding *(see col.7, lines 1-3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12).*

Regarding claim 21, *Weinberger discloses* the system according to claim 12, wherein the system also comprises a camera module and an electronic device *(see col.22, lines 47-49, the image sources 1505 may include devices such as digital cameras and scanner. The computer system 1501 may also be connected to computer networks).*

Regarding claim 22, *Weinberger discloses* the system according to claim 21, wherein the electronic device comprises means for performing mobile communication *(see column 15, lines 25-26, This computer may be connected to other computers via a network such as a local -area network (LAN). A wide -area network or via a communication finks such as telephone or cable television networks).*

Regarding claim 25, *Kato discloses* the device according to claim 23, wherein the device is also configured for determining a limit value, wherein the device is also arranged to compare said difference with said limit value in such a way that when the difference is smaller, the device is arranged to determine a quantized value by quantizing the difference, whereas when the difference is greater, the device is

arranged to determine the quantized value by quantizing the original value of the pixel *(see column 3, lines 15-17, calculating an estimation error which is equal to difference between the estimate (prediction value) and the input data (pixel)).*

Regarding claim 26, *Weinberger discloses* the device according to claim 23, wherein the device comprises a decoder for decoding the bit string in the way indicated by the code word *(see col.6, lines 64-col.7, line 3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12 and col.9, lines 44-52).*

Regarding claim 28, *Weinberger discloses* the device according to claim 27, wherein the device also comprises a transceiver for performing mobile communication (*see column 15, 25-27, this computer may be connected to other computers via a network such as a local-area network (LAN), a wide-area network or via a communication links such as telephone or cable television networks).*

Regarding claim 29*, Weinberger discloses* the device according to claim 23, wherein the device also comprises a transceiver for performing mobile communication *(see column 15, 25-27, this computer may be connected to other computers via a network such as a local-area network (LAN), a wide-area network or via a communication links such as telephone or cable television networks).*

Regarding claim 30, *Weinberger discloses* a readable storage for storing software instructions for image processing with a limited number of bits in an encoded bit string of a pixel, as well as for encoding the pixel to the limited number of bits where said

software instructions are executed by a processor to carry out the method of claim 1 *(see col.15, lines 20-33, software instructions).*

Regarding claim 31, *Weinberger discloses* a camera module comprising the device of claim 23 *(see col.22, lines 47-49, the image sources 1505 may include devices such as digital cameras and scanner. The computer system 1501 may also be connected to computer networks).*

Regarding claim 36, *Weinberger discloses* the circuit according to claim 32, wherein the decoder is arranged to decode the bit string by a decoding method corresponding to the encoding method used (*see col.6, lines 64-col.7, line 3, the encoded image may then be decoded by an image decoder, such as the one shown in the block diagram of FIG.12).*

10. Claims 6-7, 14, 17-18 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger in view of Kato as applied to claims 1 and 32 above, and further in view of Jones et al., "Jones" (U.S. Patent number 4,847, 866).

Weinberger and Kato do not disclose selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one bit indicate the use of differential pulse code modulation coding, wherein the code word length of one bit indicates the use of pulse code modulation coding.

However, regarding claim 6, Jones discloses the method according to claim 1, wherein the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths

greater than one bit indicate the use of differential pulse code modulation coding, wherein the code word length of one bit indicates the use of pulse code modulation coding *(see col.2, lines 40-50, the DPCM system also includes a quantizer 14 receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

It would have been obvious to ordinary skill in the art at the time when the invention was made to use Jones's the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding in the combined method of Weinberger and Kato of the encoding method to be used is selected between differential pulse code modulation and pulse code modulation coding in such a way that code word lengths greater than one indicate the use of differential pulse code modulation coding, wherein the code word length of one indicates the use of pulse code modulation coding because it will allow to minimize the accumulation of quantizing noise, [Jones, see column 1, lines 59-60].

Regarding claim 7, *Jones discloses* the method according to claim 1, wherein the encoding method to be used is selected between ordinary differential pulse code modulation coding and smart differential pulse code modulation coding in such a way that code word lengths greater than one bit indicate the use of differential pulse code modulation coding, wherein the code word length of one bit indicates the use of smart differential pulse code modulation coding *(see col.2, lines 40-50, the DPCM system*

also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).

Regarding claim 14, *Jones discloses* the system according to claim 12, wherein the system is also configured to determine a limit value, wherein the system is also arranged to compare the difference with the limit value in such a way that when the difference is smaller, the system is arranged to determine the quantized value by quantizing the difference, whereas when the difference is greater, the system is arranged to determine the quantized value by quantizing the original value of the pixel *(see fig.6 and column 2, lines 43-44).*

Regarding claim 17, *Jones discloses* the system according to claim 12, wherein the system also comprises a differential pulse code modulation codec and a pulse code modulation codec, wherein code word lengths greater than one bit indicate the use of the differential pulse code modulation codec, wherein the code word length of one bit indicates the use of the pulse code modulation code *(see col.2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 18, *Jones discloses* the system according to claim 12, wherein the system also comprises an ordinary differential pulse code modulation codec and a smart differential pulse code modulation codec, wherein code word lengths greater than one bit indicate the use of the differential pulse code modulation codec, wherein the

code word length of one bit indicates the use of the smart differential pulse code modulation codec *(see col.2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 34, *Jones discloses* the circuit according to claim 32, wherein the encoding method to be used is differential pulse code modulation or pulse code modulation coding *(see col.2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Regarding claim 35, *Jones discloses* the circuit according to claim 32, wherein the encoding method to be used is ordinary differential pulse code modulation coding or smart differential pulse code modulation coding *(see col.2, lines 40-50, the DPCM system also includes a quantizer 14 which receives a difference signal e(n) from the output of a difference circuit 12. The difference circuits 12 receives on its inputs, an input signal x(n) and a signal x(n)).*

Allowable Subject Matter

15. Claims 39-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. For example, claim limitation, *" wherein said code word is determined on the basis of an original and the limited number of bits in the pixel in such a way that the code word length does not exceed N - (M - 1) where M*

corresponds to the limited number of bits and N corresponds to the original number of bits." None of the references disclose above claim limitation.

References:

Bellisio et al, (U.S. Patent number 4, 491, 953)

Pexa (U.S. Patent number 4, 734, 768)

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AKLILU k. WOLDEMARIAM whose telephone number is (571)270-3247. The examiner can normally be reached on Monday-Friday 8:00 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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